

Culturing lamprey embryos.

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Public Summary:

Here we describe a method for in vitro fertilization of lamprey embryos and how to culture them to desired embryonic stages.

Scientific Abstract:

Lampreys are one of the most basal animals in which many of the true vertebrate characteristics (e.g., neural crest, placodes, segmented brain, skull, paired sensory organs, pharyngeal skeleton) are present. Studying the molecular and developmental mechanisms responsible for the formation of these structures in lamprey and higher vertebrates can provide insight into how these vertebrate characteristics evolved. The relative ease of obtaining mature adults and embryos makes this animal an ideal model for investigations into early vertebrate evolution. In addition, studies of features that are unique to lampreys can provide insights into mechanisms of parallel evolution. This protocol describes how to produce lamprey embryos by collecting sperm and eggs from mature lampreys, performing fertilization, and culturing the embryos through to the desired developmental stage.

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